

Wharves, I Simon Thompson Coal merchant of Red Cross Wharf Upper Thames Street London Bridge have for many years observed that much unnecessary labor and unavoidable inaccuracy exist in the accustomed mode of measuring coals grain seeds and all other dry measurable commodities inasmuch as the weight or quantity is lifted three times 1<sup>st</sup> By the shovel or other Unit from the ground or floor into the measure. 2<sup>nd</sup> from the measure into the sack or other Receiver 3<sup>rd</sup> by raving and carrying the sack or other receiver to the place in which it is to be deposited. By the 2<sup>nd</sup> and 3<sup>rd</sup> operations in this general mode of measuring dry goods it is obvious to every person that it is almost impossible to avoid spilling which defect is a considerable drawback on every purchase of these commodities but more particularly in that of the Article of Coals I have therefore been induced to invent and construct a measure which not only secures to the purchaser of every dry measurable commodity this equitable quantity intended him by law but also saves to the seller so considerable a portion of labor as to fully compensate him for every gain which he derives from the effects in the common mode of measuring. These advantages are obtained by the Tachymetrical measures which I have invented the originality of this invention consists in the manner revolving from two axes by which it empties itself or by the opening and shutting of the bottom through which it discharges its contents or in whatever manner those effects are produced on the principles I have laid down. The Tachymetrical measure may be made in any of the following modes 1<sup>st</sup> by attaching two pivots or axes as represented in fig 1 on the outer circumference of the measure observing that they be stationed at two thirds of the depth of the measure from the bottom and directly in a right line across the diameter to preserve an equilibrium when the measure is filled. The measure must be suspended from two pivots or axes a. a. working in the couplings bushes or sockets b. b. which are fixed in the frame c. at d. is an eye to which is fixed a rope or chain which bears the measure and discharges its contents into the desired Receiver or sack. Fig. 2 is a measure which has a moveable bottom fixed on the iron frame e. moving by the axle f. in the couplings g. g. comes up against the edge of the rim of the measure h. on the frame i. is the iron work k. to which is attached the chain j. by which the bottom of the measure is kept shut and when no effort is made to keep the measure shut it necessarily discharges its contents into any required Receiver or sack. Fig. 3. is a measure which empties itself by the moving of the sliding bottom k. through the frame l. into the hopper in and through it into the desired Receiver or sack. I have here explained three particular modes of making the Tachymetrical measures as I am persuaded they will be found to be the most efficacious and convenient ways of obtaining their advantages notwithstanding my Patent in favor every mode in which those advantages can be obtained that persons or participate in any of the principles peculiar to the Tachymetrical measures altho' wood with the usual tracings of iron will answer every well for making the Tachymetrical measure of yet their being made solely of iron will be found to be much more advantageous especially by those persons who may require from 100 to 150 discharges of a measure in an hour the fragile properties of wood are not permanently adequate to this severe action which is easily accomplished when the measures are made of iron. The Tachymetrical measure may be worked by hand with the simple assistance of a chain or a rope to turn over the measure applicable to fig 1 and to open and shut the bottom as in fig 2 and to remove the slider as in fig 3 or be facilitated greatly by various mechanical applications I have at the Red Cross Wharf three of the Tachymetrical Bushel measures worked by machinery the Drawings of which with an explanation of them I have here given. The meter only working the machinery will 130 Chaldrons of Coals in 12 hours and that with more ease to themselves than if they measured one sixth of the quantity in the common mode of measuring. The Tachymetrical measure described by Fig 2 is the one I have most in use and I think it upon the whole by far the best mode of procuring the benefit derived from the use of the Tachymetrical measure a description of the machinery at the Red Cross Wharf London Bridge used for working three of the Tachymetrical measures. A. the wrought iron shaft upon which are fixed four derived from the use of the Tachymetrical measure a description of the machinery at the Red Cross Wharf London Bridge used for working three of the Tachymetrical measures. A. the wrought iron shaft upon which are fixed four iron wheels B. B. B. C. of about twenty eight inches diameter with a groove on the edges of wheels about one inch deep and one and a quarter wide for chains to pass in three of the wheels B. B. B. are fixed on the shaft with iron key immediately over the centre of the Bushels D. D. D. which are secured down to a wored stage upon which the coals are measured from the shaft A. A. is suspended by four pair of couplings E. E. E. E. suited to the bearings of shaft and bolted up to a wored platform. The iron Chains F. F. F. pass over the wheels B. B. B. and by means of three weights one of which is shown in fig. 4 they operate as a Counterpoise not only to the weight of the bottoms of the Bushels but to the weight of the coals also when the bushels are filled. The wheel C has a rope G. which passes over it the pulling of one end of the rope turns the shaft A. A. and lets out the coals through the bottoms of the bushels D. D. D. into the Hoppers H. H. H. and from thence into the Receivers or sacks. By the other end of the rope the meter checks the rapidity of the shutting of the Bushels which is occasioned by the influence of the weights I. I. I. Fig 5 is a screw kitch Apparatus which lengthens and shortens the distance from the centre of the wheel C. to the place in which the Platform into which the runs of Bushels D. D. D. are placed is stationed a friction roller as represented in fig 6 close to the rim of each Bushel to let the Chains F. F. F. pass over and when the Bushels open to allow the Chains to go down in an acute angle without rubbing against the rim of the bushels. Immediately over the friction rollers are placed three iron sockets or funnels J. J. J. with apertures a little larger than the width of the links of Chains to prevent any extraneous coals from falling in upon the friction rollers to impede their operation. By fig 7 is represented a cast iron guard going completely round the rim of the bushel and forming a corresponding angle with the upper edge of the interior of the rim of the bushel by which all extraneous Coals are prevented from hanging over the side of the bushel this being the base of the cone from which it is to extend to a height of 7 inches over. Fig 7 is represented a suspended gauge K. which hangs from a Chain M. directly over the centre of each Bushel at the height of 7 inches from the top of the Bushel whenever the meter sees that the coals touch the gauges he then instantly lets go the rope G. and by this means he becomes effectually the uncontrolled Guardian of every purchaser as the meter is by the Tachymetrical measures the bona fide measure he being not subject in any degree to those who may fill the measures for without his personal caution the coals can never pass thro' or leave the Bushels. By the machinery here described any number of measures may be worked by the power of one man. A boy of ten years old may work the three Tachymetrical measures which I have in use in measuring of my Coals at the rate of Twelve Chaldrons per hour. Fig 8 is a representation of the swivel screws hooks attached to the wheel chains F. F. F. by the introduction of these there is procured an accurate adjustment in the length of the Chains by their subdividing in a very correct manner the length of a link of the finest chain. Fig 9. N. N. N. is a hollow cone which forms a space that allows the radius and the depth of the measure from its axis taken together to revolve and empty its contents into the Receiver by this means all extraneous coals fall down the cone upon the base from which they are measured without which hollow cone the measure would be clogged and its operation prevented. Fig 10. O. O. is a shaft on which may be fastened one or more bushels revolving in the Cones represented as in Fig 9 and 10. The shaft working in the Couplings P. P. moved by the wheel or lever Q.

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